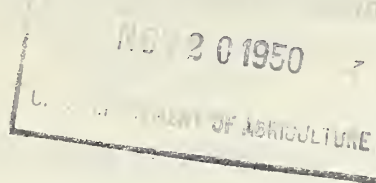


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**HANDBOOK OF
COOPERATIVES PROCESSING
HORTICULTURAL PRODUCTS
1948-49**

By
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WASHINGTON 25, D. C.

HANDBOOK OF COOPERATIVES PROCESSING HORTICULTURAL PRODUCTS, 1948-49

By

Anne L. Gessner
Agricultural Economist

This handbook contains production data on canned and frozen fruits and vegetables, dried fruits, nuts, wine, and other horticultural products processed by cooperatives in the 1948-49 season. The information is supplied annually by cooperatives to the History and Statistics Section, Cooperative Research and Service Division, Farm Credit Administration.

NUMBER OF PROCESSING HORTICULTURAL COOPERATIVES

A total of 128 cooperative plants were canning and freezing fruits and vegetables in the 1948-49 season (table 1). Of these, 25 plants were canning only vegetables; 49 were canning, brining, or pressing for juice noncitrus fruits and berries; 9 were canning both vegetables and non-citrus fruits and berries; and 15 were canning citrus juices, sections, and concentrates. Three of the 15 citrus plants were also freezing juices or concentrate. There were 30 other cooperative freezing plants operating in 1948-49. Eleven of these were freezing noncitrus fruits and berries; one was freezing fruits, berries, and vegetables; and 18 were both canning and freezing fruits, berries, and/or vegetables.

The 128 canning and freezing plants operating in 1948-49 are 11 less than the 139 plants operating in 1947-48 and 14 less than the 142 plants operating in 1946-47. Maryland, New York, Texas, and Utah each ended the 1948-49 season with one less cooperative processing plant. Florida, Virginia and Washington each lost two plants in the year. Heaviest loss occurred in Michigan, where four plants discontinued processing in 1948-49. A gain of one plant each was made in Arkansas, California, and Maine.

In addition to the canning and freezing cooperatives, whose processing plants are included in table 1, a number of cooperatives did other types of processing of horticultural products in 1948-49. Twelve cooperatives reported marketing dried fruits and five marketing tree nuts. This compares with 18 cooperatives marketing dried fruits and 8 marketing tree nuts in the 1947-48 season. The figures for the dried fruit and tree nut cooperatives include only centralized or federated cooperatives and not the local associations. Four associations processed varying quantities of other horticultural products, such as dehydrated potatoes, potato flour, potato starch, and dried peppers.

NOTE: Acknowledgment is made to Etta C. Emmons for assistance with the statistical work.

Table 1. - Cooperative plants canning and freezing fruits and vegetables, 1948-49¹

State	Total number of plants	Number of cooperative plants producing						
		Canned vegetables ²	Canned non-citrus fruits and berries ³	Canned non-citrus fruits, berries, and vegetables ³	Frozen non-citrus fruits, and berries	Frozen non-citrus fruits, berries, and vegetables	Canned and frozen non-citrus fruits, berries, and/or vegetables	Canned and/or frozen citrus juices, concentrates, sections, and by-products
Arizona-----	2	-	-	-	-	-	-	2
Arkansas-----	4	4	-	-	-	-	-	-
California-----	39	1	28	3	1	-	2	4
Colorado-----	1	-	-	1	-	-	-	-
Delaware-----	1	1	-	-	-	-	-	-
Florida-----	7	-	-	-	-	-	-	7
Idaho-----	2	1	1	-	-	-	-	-
Illinois-----	1	-	1	-	-	-	-	-
Indiana-----	4	4	-	-	-	-	-	-
Iowa-----	3	2	1	-	-	-	-	-
Maine-----	5	-	2	1	2	-	-	-
Maryland-----	1	1	-	-	-	-	-	-
Massachusetts--	2	-	2	-	-	-	-	-
Michigan-----	5	1	-	-	3	-	1	-
Minnesota-----	3	3	-	-	-	-	-	-
Nebraska-----	2	2	-	-	-	-	-	-
New Jersey-----	1	-	1	-	-	-	-	-
New York-----	8	-	3	2	-	-	3	-
Oregon-----	14	-	3	1	2	-	8	-
Pennsylvania---	6	1	2	1	-	1	1	-
South Carolina--	2	-	2	-	-	-	-	-
Texas-----	3	1	-	-	-	-	-	2
Virginia-----	4	3	1	-	-	-	-	-
Washington-----	6	-	2	-	3	-	1	-
Wisconsin-----	2	-	-	-	-	-	2	-
Total-----	128	25	49	9	11	1	18	15

¹Glass and bottled pack included.²Includes mushrooms.³Includes juice and brining or pressing operations for further processing.

SALES OF COOPERATIVE PACK

Sales of the major processed horticultural products, marketed by cooperatives in the 1948-49 season, are shown in table 2, together with the number of associations reporting and the percentage each commodity group represented of the total for all products.

Total sales of \$217 million in 1948-49 are somewhat lower than sales of \$229 million reported in 1947-48 and amounted to only about 76 percent of the \$285 million reported in 1946-47.

Sales of canned and frozen deciduous fruits, berries, and vegetables amounted to nearly \$82 million and accounted for 38.1 percent of the total in 1948-49 compared with \$76 million and 33.1 percent in 1947-48. The second most important item, citrus juices, segments, concentrates, and byproducts, amounted to \$58 million and accounted for almost 27 percent of the total. This represents a gain of almost \$3.5 million, with only 13 cooperatives reporting compared with 15 in 1947-48.

Table 2. - Sales of major horticultural products processed by cooperatives, 1948-49

Commodity	Number of associations reporting	Sales 1948-49	Percent of total
Deciduous fruits, berries, and vegetables ¹ (canned, frozen, or brined)-----	² 71	\$81,666,008	37.6
Citrus juices, segments, concentrates, and byproducts-----	13	58,450,435	26.9
Dried fruits ³ -----	² 12	30,682,537	14.1
Tree nuts-----	² 5	30,252,752	13.9
Olives-----	5	3,473,256	1.6
Wine-----	21	11,661,223	5.4
Other horticultural products-----	4	1,127,496	0.5
Total-----	² 127	217,313,707	100.0

¹Includes mushrooms.

²Three associations marketing dried fruits and one marketing nuts are also included in the 71 associations canning and freezing deciduous fruits, berries, and vegetables.

³Includes dates.

Sales of dried fruits showed a decrease of approximately \$8 million from sales in 1947-48 and amounted to \$31 million. Only 12 cooperatives reported marketing dried fruits compared with 18 in 1947-48. Sales of tree nuts showed a similar decrease and amounted to \$30 million with 5 cooperatives marketing nuts compared with 8 in 1947-48. Sales of olives increased slightly over 1947-48, amounting to \$3.5 million. Sales of wine decreased from \$17 million in 1947-48 to less than \$12 million. Other horticultural products showed a substantial gain, amounting to \$1 million compared with \$267,687 in 1947-48.

CANNED FRUIT PACK

Cooperatives canned more than 6.5 million cases¹ of the principal non-citrus fruits and berries in the 1948-49 season. Their production of these fruits amounted to almost 12 percent of the total United States pack in 1948-49 (table 3). This was the same percentage of the total they packed in 1947-48.

Berries, including cranberries and sauce, were the most important fruit canned by cooperatives, measured in terms of quantity packed. In 1948-49 the 2.8 million cases packed by cooperatives accounted for 89 percent of the United States total of all canned berries. Cooperatives canned a fifth of the pear pack in 1948-49. They also canned more than 18 percent

¹In addition to the principal noncitrus fruits and berries, cooperatives canned more than 2.2 million cases of miscellaneous fruit products and juices. See footnote 3, table 3.

Table 3. - *Principal canned fruits: Quantity of each packed by cooperatives as a percent of cooperative pack and of United States pack, 1948-49*

(Actual cases)

Commodity	Cooperative pack		United States pack ¹		Cooperative pack as a percent of U.S. pack
	Thousands of cases	Percent of pack	Thousands of cases	Percent of pack	
Apples and applesauce-----	149	2.3	6,568	11.8	2.3
Apricots-----	385	5.9	5,011	9.0	7.7
Berries ² -----	2,763	42.3	3,100	5.5	89.1
Cherries, red pitted-----	648	9.9	3,552	6.4	18.2
Cherries, sweet-----	133	2.0	952	1.7	14.0
Figs-----	-	-	641	1.1	-
Fruit cocktail and salad-----	151	2.3	12,592	22.6	1.2
Peaches-----	1,260	19.3	18,044	32.3	7.0
Pears-----	873	13.4	4,395	7.9	19.9
Plums and prunes-----	173	2.6	967	1.7	17.9
Total ³ -----	6,535	100.0	55,822	100.0	11.7

¹From "Canned Food Pack Statistics: 1948," National Cannery Association.

²Includes cranberries and sauce.

³Other fruits processed by cooperatives amounting to more than 2.2 million cases included: apple butter, jellies, and preserves, 773 thousand cases; noncitrus juices (grape, apple, cherry, pear, cider and cranberry cocktail) 1.5 million cases; and fruit purees, 1.9 thousand cases.

of the red pitted cherries and almost 18 percent of the plums and prunes. Cooperatives canned 14 percent of the sweet cherries and 7 percent of the apricots and peaches in 1948-49.

Berries, peaches, and pears combined comprised three-fourths of the total cooperative pack. Berries were the most important commodity in the cooperative pack, accounting for 42 percent of the total. Peaches accounted for almost one-fifth of the cooperative pack of canned fruits, and pears contributed another 13 percent.

In the United States pack, berries were much less important, accounting for slightly over 5 percent. Peaches amounted to 32 percent and fruit cocktail and salad comprised 22 percent of the United States total. Apples and applesauce accounted for almost 12 percent of the total United States pack of all fruit products but amounted to only 2 percent of the total cooperative pack.

CANNED VEGETABLE PACK

Reporting cooperatives processed 4.8 million cases² of the principal canned vegetables, on the basis of 24 No. 2 cans to the case, in 1948-49 compared with 6.1 million cases in 1947-48 (table 4). They accounted for 3.3 percent of the United States total pack of canned vegetables compared with 4.3 percent in 1947-48.

As a percent of the United States pack, the cooperative volume of green and wax beans was the most important commodity, amounting to almost 10 percent of the United States pack of this vegetable. Although cooperatives accounted for more than one-fourth of the carrots canned in 1947-48, they canned only 7 percent of the total in 1948-49. This resulted from the fact that while the cooperative pack remained almost as high as in 1947-48, the United States pack increased in all producing areas and amounted to more than 3 million cases compared with less than a million cases in 1947-48. Beets packed by cooperatives amounted to slightly over 6 percent of the total, dropping from more than 16 percent in 1947-48. Other vegetables canned by cooperatives were less important and none accounted for more than 4 percent of the United States pack.

Green and wax beans amounted to almost one-third of the total cooperative pack. Sweet corn was second in importance, amounting to slightly over 22 percent of the cooperative total. Peas amounting to 13 percent and tomato juice with 12 percent, were the only other commodities of importance in the cooperative pack.

In the United States pack, sweet corn outranked other vegetables in importance, accounting for more than one-fifth of the total. Tomato juice ranked next in importance, amounting to 19 percent of the total. Peas and tomatoes were also important in the United States pack, each amounting to 16 percent of the total.

²In addition to the principal canned vegetables, cooperatives also packed 3.2 million cases of miscellaneous vegetables. See footnote 2, table 4.

Table 4. - *Principal canned vegetables: Quantity of each packed by co-operatives as a percent of cooperative pack and of United States pack, 1948-49*

(Basis 24 No. 2 cans)

Commodity	Cooperative pack		United States pack ¹		Cooperative pack as a percent of U.S. pack
	Thousands of cases	Percent of pack	Thousands of cases	Percent of pack	
Asparagus-----	-	-	3,620	2.5	-
Beans, green and wax-----	1,478	30.7	15,174	10.4	9.7
Beans, green lima-----	26	0.5	2,476	1.7	1.1
Beets-----	282	5.8	4,472	3.0	6.3
Carrots-----	219	4.5	3,106	2.1	7.1
Sweet corn-----	1,073	22.3	31,483	21.5	3.4
Peas-----	627	13.0	23,356	16.0	2.7
Pumpkin and squash-----	61	1.3	1,761	1.2	3.5
Spinach-----	151	3.1	5,011	3.4	3.0
Tomatoes-----	246	5.1	24,393	16.7	1.0
Tomato juice-----	563	11.7	27,774	19.0	2.0
Tomato pulp and puree-----	96	2.0	3,711	2.5	2.6
Total ² -----	4,822	100.0	146,337	100.0	3.3

¹From "Canned Food Pack Statistics: 1948," National Cannery Association.

²Other vegetables packed by cooperatives amounted to approximately 3.2 million cases. These were (in thousands of cases): Black eye peas, 7; greens, 10; mushrooms, 43; sauerkraut, 25; tomato cocktail, 319; tomato paste, 1,264; miscellaneous vegetable juices, 11; and all varieties of dried beans, 1,514.

NUMBER OF COOPERATIVES FREEZING

The number of cooperatives freezing noncitrus fruits, berries, and vegetables in the 1948-49 season was 29, representing a decrease of 2 from the 31 engaged in freezing in the 1947-48 season. Seventeen of the 28 cooperatives were both canning and freezing noncitrus fruits, berries, and vegetables; one was freezing noncitrus fruits, berries, and vegetables; and the remaining 11 were freezing only fruits and berries. Almost one-half of these were Pacific Coast cooperatives. Ten were in Oregon, 1 in Washington, and 3 in California. Five were in the East North Central area. Of these, one was in Wisconsin and the others in Michigan. Five other cooperative freezers were in the Middle Atlantic area, with 3 in New York and 2 in Pennsylvania. Two other cooperatives freezing fruits and berries were in New England.

FROZEN FRUIT PACK

Noncitrus fruits frozen by cooperatives in 1948-49 totaled about 51 million pounds (table 5). This was approximately 8 million pounds less than the 59 million pounds frozen in 1947-48 and represented a decrease of almost 15 percent from the previous year.

The 51 million pounds frozen by cooperatives in 1948-49 amounted to 14 percent of the total United States Pack, compared with 17 percent in 1947-48. Cooperatives froze 89 percent of the gooseberries, 47 percent of the boysenberries, and almost 46 percent of the prunes. Their percentage of the total frozen strawberry pack was the same as the previous year, about 13 percent. Their percentage of the red raspberry pack dropped from 39 percent in 1947-48 to almost 17 percent in 1948-49. Their proportion of the black raspberry volume also decreased, dropping from 16 percent in 1947-48 to 12 percent in 1948-49. Apples and applesauce dropped from 24 percent to a mere 5 percent of the United States total. Cooperatives resumed freezing apricots in 1948-49 and processed about 98,000 pounds, representing a very small percentage of their total volume. Cooperatives increased their percentage of the United States total for cherries, peaches, blueberries, boysenberries, and currants.

Strawberries were the most important in the cooperative pack, accounting for two-fifths of the total. Cherries ranked second and amounted to

Table 5. - *Principal frozen noncitrus fruits: Quantity of each packed by cooperatives as a percent of cooperative pack and of United States pack, 1948-49*

Commodity	Cooperative pack		United States pack ¹		Cooperative pack as a percent of United States pack
	Number of pounds	Percent of pack	Number of pounds	Percent of pack	
Apples and applesauce--	1,482,207	2.9	27,551,778	7.6	5.4
Apricots-----	97,890	0.2	2,476,949	0.7	4.0
Cherries, tart and sweet-----	14,635,815	28.9	88,461,862	24.4	16.5
Grapes and pulp-----	141,400	0.3	5,510,983	1.5	2.6
Peaches-----	521,482	1.0	13,598,338	3.8	3.8
Prunes-----	971,041	1.9	2,125,326	0.6	45.7
Blackberries-----	2,140,565	4.2	9,745,426	2.7	22.0
Blueberries-----	775,405	1.5	7,660,830	2.1	10.1
Boysenberries-----	4,157,477	8.2	8,832,472	2.4	47.1
Currants-----	816,200	1.6	3,879,824	1.1	21.0
Gooseberries-----	39,142	0.1	44,000	(2)	89.0
Loganberries-----	124,369	0.3	4,174,095	1.1	3.0
Raspberries, black-----	549,988	1.1	4,518,975	1.2	12.2
Raspberries, red-----	3,919,322	7.7	23,197,984	6.4	16.9
Strawberries-----	20,286,817	40.0	160,077,403	44.2	12.7
Youngberries-----	33,351	0.1	662,761	0.2	5.0
Total ³ -----	50,692,471	100.0	362,519,006	100.0	14.0

¹From "Frozen Food Pack Statistics: 1948," National Association of Frozen Food Packers.

²Less than .05 percent.

³Other noncitrus fruits frozen by cooperatives in the form of pulp, puree, and juices amounted to 105,095 pounds.

29 percent of the cooperative total. These two commodities combined accounted for almost 70 percent of the cooperative pack.

In the United States pack, as in the cooperative pack, strawberries and cherries were the two major commodities, and amounted to 69 percent of the total volume.

FROZEN VEGETABLE PACK

The volume of vegetables frozen by cooperatives increased from 6.7 million pounds in 1947-48 to 8.4 million pounds in 1948-49 (table 6). This still represented 2.1 percent of the United States pack, the same percentage as in 1947-48. The United States pack had increased from 317 million pounds in 1947-48 to 396 million pounds in 1948-49.

The cooperative volume of corn-on-cob was the most important as a percent of the United States pack. Cooperatives froze 12 percent of the total. Cooperatives also processed about 7 percent of the carrots frozen in 1948-49 and more than 6 percent of the green snap beans. They also packed a substantial volume of cut corn, their production amounting to about 4 percent of the total. Although cooperatives produced about one-fourth of all rhubarb frozen in 1948-49, this was not a commodity of major importance and amounted to less than 1 percent of the United States total pack of all vegetables.

Table 6. - *Principal frozen vegetables: Quantity of each packed by cooperatives as a percent of cooperative pack and of United States pack, 1948-49*

Commodity	Cooperative pack		United States pack ¹		Cooperative pack as a percent of United States pack
	Number of pounds	Percent of pack	Number of pounds	Percent of pack	
Asparagus-----	27,950	0.3	18,321,209	4.6	0.2
Beans, green snap-	3,105,281	37.0	49,583,305	12.5	6.3
Beans, lima-----	561,622	6.7	75,403,478	19.0	0.7
Broccoli-----	371,737	4.4	29,126,046	7.4	1.3
Carrots-----	1,056,925	12.6	15,392,980	3.9	6.9
Cauliflower-----	269,415	3.2	13,962,515	3.5	1.9
Corn - cut-----	726,884	8.7	20,919,820	5.3	3.5
Corn-on-cob-----	1,219,452	14.5	10,323,649	2.6	11.8
Peas-----	279,981	3.3	118,976,557	30.0	0.2
Rhubarb-----	650,007	7.7	2,629,021	0.7	24.7
Spinach-----	132,927	1.6	41,571,318	10.5	0.3
Total ² -----	8,402,181	100.0	396,209,898	100.0	2.1

¹From "Frozen Food Pack Statistics: 1948," National Association of Frozen Food Packers.

²Other vegetables frozen by cooperatives amounted to about 1.6 million pounds and included mixed vegetables, succotash, peas and carrots, and french fried potatoes.

In the cooperative pack, green snap beans ranked first, amounting to 37 percent of the total. Corn-on-cob was second with more than 14 percent of the total, and carrots were third, amounting to about 13 percent of the cooperative total.

In the total United States pack of vegetables, peas continued to be the most important vegetable amounting to 30 percent of the total. This was, however, considerably below the 42 percent peas represented in the 1947-48 pack. Lima beans were second in importance, amounting to about 19 percent of the total, and green snap beans were third, representing about 13 percent of the total. Spinach was another important item in the United States pack, amounting to more than 10 percent of the total.

CONTAINER SIZES USED FOR FROZEN FRUITS AND VEGETABLES

The percentages of the principal frozen fruits packed in each container size are shown in table 7. Container sizes were designated for only about one-half of the volume cooperatives reported freezing in the 1948-49 season.

Slightly over 10 percent of this total volume was packed in the small retail sizes of 1 pound or less. This is a considerably larger percentage than the approximate 4 percent reported packed in the small retail size in the 1947-48 season. The large institutional size of more than 10 pounds was used for 27 percent of the pack compared with about 32 percent in 1947-48. The small institutional size of over 1 pound through 10 pounds was relatively unimportant and was used for less than 3 percent of the cooperative pack. About 9 percent was marketed in barrels.

When the volume for which no container size was designated is excluded from the analysis, the large institutional size was used for more than one-half of the pack for which sizes were specified. On this basis, a little over one-fifth of the cooperative total was marketed in the small retail size of 1 pound or less.

The percentages of each of the principal frozen vegetables packed in the different container size groups are shown in table 8. Container sizes were not designated for about one-fourth of the total cooperative pack. Slightly over 21 percent of the cooperative total was packed in small retail sizes of 1 pound or less. Almost 46 percent was marketed in the large institutional size of more than 10 pounds.

When the quantities for which sizes were not designated are excluded, the small retail size was used for almost 30 percent and the large institutional size for about 60 percent of the volume for which container sizes were reported.

Table 7. - Cooperative pack of principal frozen fruits according to percentage packed in each container size, 1948-49

Commodity	1 pound or less	Over 1 pound through 10 pounds	Over 10 pounds	Barrels	Unspeci- fied	Total	
	Percent					Pounds	Percent
Apples and applesauce-----	-	-	84.4	0.1	15.5	1,482,207	100.0
Apricots-----	-	-	100.0	-	-	97,890	100.0
Cherries, tart and sweet----	1.0	0.1	39.2	.7	59.0	14,635,815	100.0
Grapes and pulp-----	-	-	-	-	100.0	141,400	100.0
Peaches-----	19.6	-	50.6	-	29.8	521,482	100.0
Prunes-----	-	12.3	83.5	.5	3.7	971,041	100.0
Blackberries-----	1.1	6.6	3.9	39.9	48.5	2,140,565	100.0
Blueberries-----	10.8	-	5.4	-	83.8	775,405	100.0
Boysenberries-----	.3	1.2	3.0	.6	94.9	4,157,477	100.0
Currants-----	-	-	-	100.0	-	816,200	100.0
Gooseberries-----	-	-	95.8	-	4.2	39,142	100.0
Loganberries-----	-	-	36.8	26.9	36.3	124,369	100.0
Raspberries, black-----	-	(1)	39.3	17.9	42.8	549,988	100.0
Raspberries, red-----	7.4	.8	22.2	20.8	48.8	3,919,322	100.0
Strawberries-----	21.9	5.0	20.2	8.3	44.6	20,286,817	100.0
Youngberries-----	-	-	70.4	-	29.6	33,351	100.0
Total-----	10.1	2.7	27.0	8.7	51.5	50,692,471	100.0

¹Less than .05 percent.

Table 8. - Cooperative pack of principal frozen vegetables according to percentage packed in each container size, 1948-49

Commodity	1 pound or less	Over 1 pound through 10 pounds	Over 10 pounds	Unspecified	Total	
	Percent				Pounds	Percent
Asparagus-----	-	-	-	100.0	27,950	100.0
Beans, green snap-----	28.1	13.2	35.0	23.7	3,105,281	100.0
Beans, lima-----	.3	-	6.0	93.7	561,622	100.0
Broccoli-----	-	-	-	100.0	371,737	100.0
Carrots-----	-	12.2	87.8	-	1,056,925	100.0
Cauliflower-----	50.8	-	-	49.2	269,415	100.0
Corn-cut-----	30.6	6.7	62.7	-	726,884	100.0
Corn-on-cob-----	-	1.9	98.1	-	1,219,452	100.0
Peas-----	-	11.1	14.0	74.9	279,981	100.0
Rhubarb-----	81.6	-	12.5	5.9	650,007	100.0
Spinach-----	9.0	-	-	91.0	132,927	100.0
Total-----	21.1	7.6	45.5	25.8	8,402,181	100.0

OTHER NONCITRUS FRUIT PRODUCTS

In addition to the canned and frozen fruits shown in detail in tables 3 and 5, cooperatives also processed a number of other noncitrus fruit products. These included 773 thousand cases of apple butter, jellies, and preserves; 1.5 million cases of grape, apple, cherry and pear juices, cider and cranberry cocktail; and about 2 thousand cases of fruit purees. They also froze more than 105 thousand pounds of various fruit juices, pulp, and purees. They produced about 220 thousand gallons of apple and grape concentrates, and more than 100 thousand gallons of vinegar. Other products included apple and pear pomace.

Cooperatives are important processors of brined cherries. Ten cooperatives reported processing a total of more than 7.8 million pounds in 1948-49.

CITRUS JUICES AND SEGMENTS

The quantity of citrus juices and segments canned by cooperatives dropped from 17.5 million cases in 1947-48 to 11.8 million cases in 1948-49 (table 9). Their proportion of the United States pack was 23 percent in 1948-49 compared with 28 percent the previous year. This decrease was spread over the three major citrus juices. Their production of grapefruit juice dropped from almost 6 million cases in 1947-48 to 4.2 in 1948-49. Orange juice volume dropped from 7 million cases to 4 million and blended orange and grapefruit juice decreased from 3.4 million cases to 1.8 million cases in 1948-49.

On the other hand, the cooperative volume of tangerine juice increased from 157 thousand cases to 281 thousand cases in 1948-49 and lemon juice production by cooperatives increased from 175 thousand to 234 thousand cases, grapefruit segments from 585 thousand cases to 851 thousand cases, and citrus salad from 87 thousand to 237 thousand cases in 1948-49.

As a percent of the United States pack, grapefruit juice processed by cooperatives represented 30 percent of the total pack, compared with 34 percent in 1947-48. Orange juice processed by cooperatives amounted to 21 percent of the total, compared with 26 percent in 1947-48. The proportion of orange and grapefruit blended juice processed by cooperatives showed the greatest decrease, dropping from 27 percent of the total in 1947-48 to a little more than 16 percent in 1948-49.

Cooperatives increased their percentage of the tangerine juice pack from 21 to 28 percent. Cooperatives in 1948-49 canned almost 52 percent of the lemon juice compared with 36 percent in 1947-48. They also processed almost one-fifth of the grapefruit segments and about one-fourth of all citrus salad canned in 1948-49. In the processing of a new blended juice, tangerine-orange-grapefruit juice, cooperatives were of major importance, producing slightly more than one-half of the total.

As a percent of the cooperative pack, grapefruit juice exceeded orange juice only slightly, 36 percent compared with 34 percent. This returns grapefruit juice to the position held prior to 1947-48. Only in 1947-48 did the cooperative pack of orange juice exceed that of grapefruit juice. The smaller pack of canned orange juice in 1948-49 was, no doubt, influenced by crop damage in that producing season and by the very important shift to the production of frozen concentrate.

In the United States pack, although orange juice decreased by more than 8 million cases, it outranked grapefruit juice and accounted for more than 37 percent of the total compared with 28 percent for grapefruit juice. In 1947-48 orange juice amounted to 43 percent of the United States total compared with 28 percent for grapefruit juice. Orange and grapefruit blended juice increased slightly, amounting to 21 percent compared with almost 20 percent in 1947-48. Grapefruit segments also gained in importance, amounting to about 9 percent of the total compared with 5 percent in 1947-48.

Cooperatives processed more than one-fifth of the frozen citrus concentrates produced in 1948-49 or 2.6 million gallons (table 10). Frozen

Table 9. - *Principal canned citrus fruit juices and segments: Quantity of each packed by cooperative associations as a percent of cooperative pack and of United States pack, 1948-49*

(Basis 24 No. 2 cans)

Commodity	Cooperative pack		United States pack ¹		Cooperative pack as a percent of United States pack
	Thousands of cases	Percent of pack	Thousands of cases	Percent of pack	
Grapefruit juice-----	4,230	35.8	14,304	27.7	29.6
Orange juice-----	4,045	34.2	19,262	37.3	21.0
Orange and grapefruit blended juice-----	1,786	15.1	10,829	21.0	16.5
Tangerine juice-----	281	2.4	985	1.9	28.5
Tangerine-orange - grapefruit juice-----	137	1.2	273	0.5	50.2
Lemon juice-----	234	2.0	454	0.9	51.5
Total juices-----	10,713	90.7	46,107	89.3	23.2
Grapefruit segments-----	851	7.2	4,427	8.6	19.2
Orange segments-----	14	0.1	111	0.2	12.6
Citrus salad-----	237	2.0	987	1.9	24.0
Total juices, segments, and salad-----	11,815	100.0	51,632	100.0	22.9

¹From "Citrus Products: 1948-49 Season Canned Pack and October 31, Stocks of Canned Single Strength Juices and Segments, and Packs of Concentrated Juices by States of Origin," Fruit and Vegetable Branch, Production and Marketing Administration, U. S. Department of Agriculture, February 24, 1950.

Table 10. - *Principal concentrated citrus juices: Quantity of each packed by cooperative associations as a percent of cooperative pack and of United States pack, 1948-49*

Commodity	Cooperative pack		United States pack ¹		Cooperative pack as a percent of United States pack
	Thousands of gallons	Percent of pack	Thousands of gallons	Percent of pack	
Frozen pack:					
Orange-----	2,590	99.2	12,196	98.2	21.2
Grapefruit-----	21	0.8	116	0.9	18.1
Grapefruit & orange	-	-	112	0.9	-
Total-----	2,611	100.0	12,424	100.0	21.0
Processed pack:					
Orange-----	396	100.0	4,667	96.9	8.5
Grapefruit-----	-	-	150	3.1	-
Total-----	396	100.0	4,817	100.0	8.2

¹From "Citrus Products: 1948-49 Season Canned Pack and October 31, Stocks of Canned Single Strength Juices and Segments, and Packs of Concentrated Juices by States of Origin". Fruit and Vegetable Branch, Production and Marketing Administration, U. S. Department of Agriculture, February 24, 1950.

orange concentrate was by far the most important of the frozen citrus concentrates, accounting for more than 98 percent of the United States total. Cooperatives produced almost 2.6 million gallons of frozen orange concentrate, or 21 percent of the United States total.

In the production of processed or canned citrus concentrate, cooperatives were not a major factor and produced less than 10 percent of the total. In addition to the concentrates analyzed in table 10, cooperatives also produced thousands of gallons of frozen lemon juice, both concentrate and natural.

OTHER CITRUS PRODUCTS

Cooperatives processed substantial volumes of other citrus products in 1948-49. These included more than 16 thousand tons of citrus pulp and about 4 thousand tons of citrus molasses for livestock feed.

WINE PROCESSED

Twenty-one cooperative wineries reported a total production in 1948-49 of 25.9 million gallons of wine and 944 thousand gallons of brandy (table 11). Although cooperative production dropped only a million gallons from the 1947-48 season, it amounted to 15 percent of the total combined production of wine and brandy compared with about 22 percent in 1947-48. This decrease as a percentage of the United States total is accounted for not only by the decreased cooperative volume, but by the

Table 11. - Cooperative production of wine and brandy as a percent of California and of United States total, 1948-49

(In thousands of gallons)

Commodity	Cooperative production	Net production in California ¹	Cooperative as a percent of California production	Net production United States total ¹	Cooperative as a percent of United States production
Wine-----	25,887	130,942	19.8	139,845	18.5
Brandy-----	944	35,760	2.6	35,980	2.6
Total-----	26,831	166,702	16.1	175,825	15.3

¹From "Thirteenth Annual Wine Industry Statistical Survey," Part III, Wine Institute Bulletin No. 446, December 13, 1949.

increase in the United States total. In 1948-49 the total production in the United States of wine and brandy amounted to almost 176 million gallons compared with about 129 million gallons in 1947-48, or an increase of about 50 million gallons. All 21 cooperative wineries are in California.

OLIVES

Four cooperatives reported canning olives in the 1948-49 season. Their combined production amounted to approximately 289 thousand actual cases. The United States pack in 1948-49, according to "Canned Food Pack Statistics: 1948," published by the National Cannery Association, was estimated at 937 thousand actual cases. Cooperative volume in 1948-49, therefore, amounted to about 31 percent of the total, compared with 32 percent in 1947-48 when they produced about 309 thousand cases.

Two associations canning olives also produced olive oil. One other association was engaged in processing olive oil and did no canning. These three associations together produced nearly 110 thousand gallons of olive oil. This compares with a reported volume of 42 thousand gallons produced the previous year.

DRIED FRUITS

Cooperatives in 1948-49 dried a large number of fruits including apples, apricots, dates, figs, peaches, pears, prunes, and raisins. Less important were dried black raspberries and nectarines. The total volume of these dried fruits produced by cooperatives amounted to 256 million pounds (dried basis) or 128,000 tons. This compared with a total production of 167,000 tons in 1947-48. The cooperative production in 1948-49 amounted to 28 percent of the United States total and is the same percentage of the total processed by cooperatives in the 1947-48 season. United States production of these fruits dropped from approximately 592 thousand tons in 1947-48 to about 458 thousand tons in 1948-49.

The most important fruits in the cooperative production were prunes and raisins. These two alone accounted for more than 92 percent of the cooperative total. Apricots and dates accounted for another 5 percent and peaches and figs for a little over 2 percent.

TREE NUTS

Cooperatives maintained their importance in 1948-49 in the marketing of tree nuts (table 12). Total production of the three major tree nuts reported by 5 associations amounted to almost 133 million pounds, about 7 million pounds more than their 1947-48 production. United States production also increased from 163 million pounds to 174 million in 1948-49.

The 133 million pounds produced by cooperatives in 1948-49 represented 76 percent of the United States total, compared with 77 percent in 1947-48. Walnuts produced by cooperatives amounted to approximately 87 percent of the United States production. Almonds processed by cooperatives accounted for 60 percent of the United States total. Cooperatives also produced 83 percent of the total production of filberts in 1948-49. However, filberts were less important than the other two types of tree nuts in the combined United States total for all tree nuts. They accounted for 5 percent of the total, while walnuts amounted to 56 percent and almonds 39 percent of the combined United States total.

As a percent of the total cooperative production of tree nuts, walnuts were still the most important of the three types, accounting for 64 percent of the cooperative total. Almonds amounted to 31 percent and filberts to 5 percent of the cooperative volume. This was approximately the same relationship as in 1947-48.

Table 12. - *Tree nuts: Quantity of each processed by cooperatives as a percent of cooperative production and of United States production, 1948-49*¹

Kind	Cooperative production merchantable unshelled		United States production merchantable unshelled		Cooperative production as a percent of United States production
	Thousands of pounds	Percent of production	Thousands of pounds ²	Percent of production	
Almonds-----	40,575	30.6	67,600	38.8	60.0
Filberts-----	7,313	5.5	8,800	5.1	83.1
Walnuts-----	84,822	63.9	97,800	56.1	86.7
Total----	132,710	100.0	174,200	100.0	76.2

¹Pecans are not included as no cooperatives reported processing them.

²From "Tree Nuts: Acreage, Production, Farm Disposition, Value, and Utilization of Sales, 1946, 1947, and 1948," Bureau of Agricultural Economics, U. S. Department of Agriculture, August 1949.

OTHER PROCESSED HORTICULTURAL PRODUCTS

Other horticultural products processed by cooperatives included about 2.5 million pounds of dehydrated potatoes, more than 4.5 million pounds of potato flour, over 250 thousand pounds of potato starch, and approximately 370 thousand pounds of dried red peppers. The combined value of these miscellaneous products amounted to more than \$1 million in 1948-49.

